Working Paper No. 45

Potential for increasing producers' income from wool, fibre and pelts in Central Asia

Socio-economics and Policy Research

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE
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Socio-economics and Policy Research Working Paper 45

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Preface and acknowledgements

The Consultative Group on International Agricultural Research (CGIAR) Central Asia and Caucasus Initiative (CAC) 'Research for development of smallholder livestock production in Central Asia and the Caucuses' has three modules:

1. Increasing feed resources and improving utilisation and conservation of natural resources
2. Characterisation, conservation and utilisation of indigenous cattle and sheep breeds
3. Analysis of policy options to create enabling environments for improved smallholder livestock production and marketing.

This paper concerns Module 3. The International Livestock Research Institute (ILRI) commissioned The Macaulay Land Use Research Institute (MLURI) to carry out a short mission to identify and analyse policy constraints to processing, marketing and the development of value-added products in the livestock sectors of Kazakstan and Turkmenistan. The mission was carried out by Carol Kerven and Angus Russel in May 2000, hosted by the Kazak Research Institute of Sheep Breeding in Kazakstan and the Turkmen Institute of Livestock Husbandry in Turkmenistan. Additional information from Kyrgyzstan as well as new information from Kazakstan and Turkmenistan (Kerven 2001a; Kerven 2001b) are included here.

Facilitation in Kazakstan was provided by Nurlan Malmakov (Kazak Sheep Breeding Institute) and in Turkmenistan by Abdul Jabbar (private consultant). The following national scientists contributed information for this report:

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1 Summary

The systems of livestock production, marketing and research have been profoundly transformed by recent policies in Central Asia since the break up of the Soviet Union. Decollectivisation of state farms has transferred livestock ownership to new private farming units. These receive little or no state support for inputs, or for processing and selling livestock products. Most livestock-keeping families have much-reduced incomes compared to the Soviet period. Live animal sales now constitute the main subsistence income for such families, but may be unsustainable for the majority of families who own small numbers of animals. Poverty is particularly prevalent in the more remote areas distant from urban markets.

The Central Asian countries had highly developed livestock industries, which produced wool, other animal fibres and pelts, as well as meat. Wool and pelts were formerly the principal livestock exports from some Central Asian countries to the Soviet Union market. Following the disintegration of the Soviet Union, these industries, and the USSR market on which they were based, largely collapsed. The wool and fibre industries are now experiencing a partial revival.

The region has a comparative advantage in producing livestock on an extensive basis. Rangelands cover more than 60% of the agricultural area, managed by herders with traditional skills. There is a genetic fund of indigenous and crossbred animals of economic value, and a depth of national research skills inherited from the Soviet period. The state withdrawal from research, production, grading and processing has resulted in lower quality and quantity of outputs. The new private farms still lack incentives to produce better and more wool, camel hair, cashmere, mohair and pelts. Their income from sales of these items was negligible during most of the 1990s but is now rising due to positive trends at least in the wool and cashmere industries, thus creating demand for these products.

The main findings are:

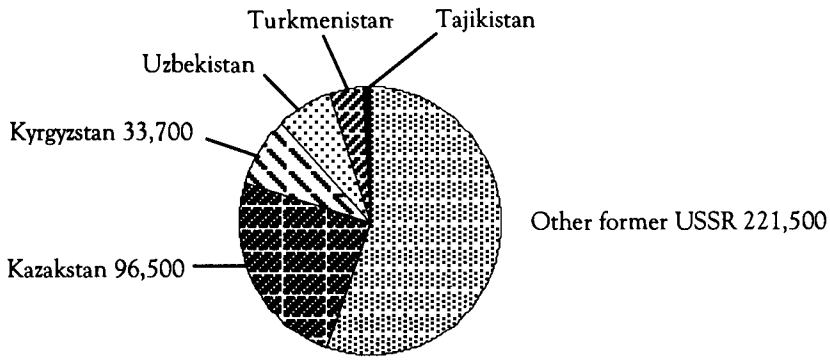
- Loss of export market connections and national facilities since 1991 led to a wide negative differential between domestic/international and current/historical prices for wools, other animal fibres and pelts throughout most of the 1990s. In the Soviet period, the fleece from one sheep was sufficient for a Turkman producer to buy a 50 kg sack of flour but would now be barely enough to purchase a loaf of bread. After independence, producers in Kazakstan received one-quarter of the USA price paid for fine wool and a fraction of the Chinese price for cashmere fibre until the late 1990s. Karakul (Astrakhan lamb) pelts are still sold by producers in Turkmenistan and Kazakstan at one-tenth of the price received for Afghan or Namibian pelts. The sharp decline in real income from wools, fibres and pelts is immediately obvious to producers who can recall, only a decade past, when their incomes from these commodities was much higher. Narrowing domestic and international price gaps would offer an immediate incentive to increase production of more economically valuable types of livestock.

- Producers have been able to respond to new commercial opportunities for selling live animals to the domestic urban markets, which offer quite attractive prices. Supply is fairly sensitive to demand and prices for live animals are unlikely to rise significantly in the near future. Potential for meat exports is barred by international veterinary requirements. The main constraint for producers to increase meat output is the shortage, cost and low quality of feedstuffs.
- There is a depth of national research experience on wools, fibres and pelts, inherited from the Soviet period. This experience offers an excellent foundation for collaborative research to upgrade national skills and make use of valuable human resources. However, national research institutes have been unable to respond to the new economic situation. This has been due to cutbacks in state funding, inappropriate methods for investigating private smallholders' priorities under market conditions, and lack of information on domestic and global market trends. Links between producers and researchers have been broken with the breakdown of the central planning system. Researchers now have no channels to disseminate information and advice or to introduce improved breeds to producers. There is an opportunity for the International Livestock Research Institute (ILRI) to apply its experience of strengthening the capacity of national research institutes and to improve the linkages between researchers and clients.
- Due to the emphasis given in the Soviet period to developing new breeds and strains of livestock, there still exists a genetic fund for rehabilitating the wool, fibre and pelt industries. This genetic fund is in immediate danger of being lost through uncontrolled breeding, lack of research support and financial disincentives for producers to preserve genetic resources. The wild species of Central Asian small ruminants are also a valuable, though often endangered, genetic resource.
- International commercial interest in buying Central Asian wools and fibres has accelerated since the end of the 1990s. Led by China, buyers are probing out to remote communities in search of high-value cashmere and fine wool. In the last two years, producer prices for fine sheep wool have doubled while goat cashmere prices have increased ten-fold or more. During most of the 1990s, the raw products were simply exported unfinished, with no value added to the producer nation. But foreign investors have recently rehabilitated crumbling, bankrupt Soviet wool processing factories, and are now seeking good quality wools and fibres. Although international western companies remain wary of directly importing these products, rising domestic demand means that producers can expect better prices.

2 Background

Following the collapse of the Soviet Union in the early 1990s, the pace of reforms has differed between the five Central Asian republics namely Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan and Kazakhstan (Green and Vokes 1997; Spoor 1997; Pomfret 1999; UNDP 1999; Kerven 2002a). In Turkmenistan and Uzbekistan the state has not entirely withdrawn from livestock production and marketing, which has been the case in Kazakstan. Kyrgyzstan's new private agricultural sector is now receiving considerable donor support. Implementation of reforms in Tajikistan has been delayed due to severe economic disruption and warfare.

The production of wool and fibres has long been important within Central Asian livestock systems (Morozov 1913; Polferov 1913; Eidrigevich 1951). Many of the indigenous livestock species of Central Asia are thickly wooled, with down undercoats in some instances, due to the extremely cold winter climate. During the Soviet period, the livestock systems were developed to produce specialised fine wools, fibres and pelts which made up a significant, and in some countries, the major economic value of livestock production (Kerven et al. 1996; Diddi and Menegay 1997). Figure 1 shows that immediately after independence, the five Central Asian countries produced nearly half the wool of the former Soviet Union.



Source: FAO (2002).

Figure 1. *Tonnes of wool produced by Central Asia at the end of the Soviet Union (1992).*

Kazakstan provided one-fifth of the wool requirements of the USSR, and Turkmenistan annually exported over one million Karakul (Astrakhan lamb) pelts at the end of the Soviet period (Matley 1989; McCauley 1994). From the 1940s, breeding programmes were established to cross indigenous hardy breeds with exotics such as Merinos, Russian angora goats and other European specialised breeds for milk, wool and meat (Liskun 1949; Medeubekov et al. 1999). Indigenous breeds such as Karakul sheep and camels were also improved and diversified.

The centrally-planned agricultural economies of the Soviet Union were organised around state purchase orders, in which annual production quotas were delivered by state farms to central processing facilities (Matley 1989). Products were then redistributed by state agencies within each Republic for domestic consumption, or transferred between Soviet republics according to higher-order Union plans. Markets were thus purely captive, the value of products was predetermined and producers' incomes were ensured (Spoor 1997).

The break up of the Soviet Union combined with the removal of state purchase orders meant that agricultural outlets and prices were no longer set. Although privatisation and market liberalisation has proceeded differently in each state, in general the state has withdrawn from involvement in marketing (Kerven 2002b and c). Each farm production unit, whether a small-scale family unit or former state farm, must now seek its own markets in competition with other suppliers.

Demand for meat among urban consumers has allowed newly-privatised livestock units to gain an income by selling live animals, as commercial domestic marketing chains have been established (Kerven 2002b and c). Producers quickly switched from the crossbred wool breeds back to the hardier indigenous breeds which require less winter feed and attract a premium price for the quality of their meat. The potential for research to improve producers' incomes from the domestic meat trade will be mainly by increasing the quality and quantity of feed sources (Wright et al. 2002). Possibilities for meat export are hampered by the breakdown in national veterinary services leading to outbreaks of diseases such as anthrax and foot-and-mouth. Few countries would allow meat to be imported without strict veterinary certification. Moreover, meat supply does not match domestic demand in some Central Asian countries such as Turkmenistan.

In contrast, commercial channels for wool, fibres and pelts have developed more slowly in the transition period, although commercial demand is now causing a partial revival in the industry. There is considerable potential to increase producers' income from selling wool, fibre and pelt, by introduction (or re-introduction) of improved fibre breeds and by locating niche markets. Meat does not need specialised markets, but the wools and fibres are price sensitive to quality and require grading and testing to international standards if the maximum prices are to be obtained. If markets for high value fibres are developed, this would give producers a renewable annual income over several years per animal, while the carcass gives only a final income at 2–6 years of age. For the less valuable coarse wools, efforts are required to add value through domestic processing, as significantly higher producer prices for raw wool of this type cannot be expected.

3 Policy issues

A number of policy constraints have been identified (Kerven 2002a):

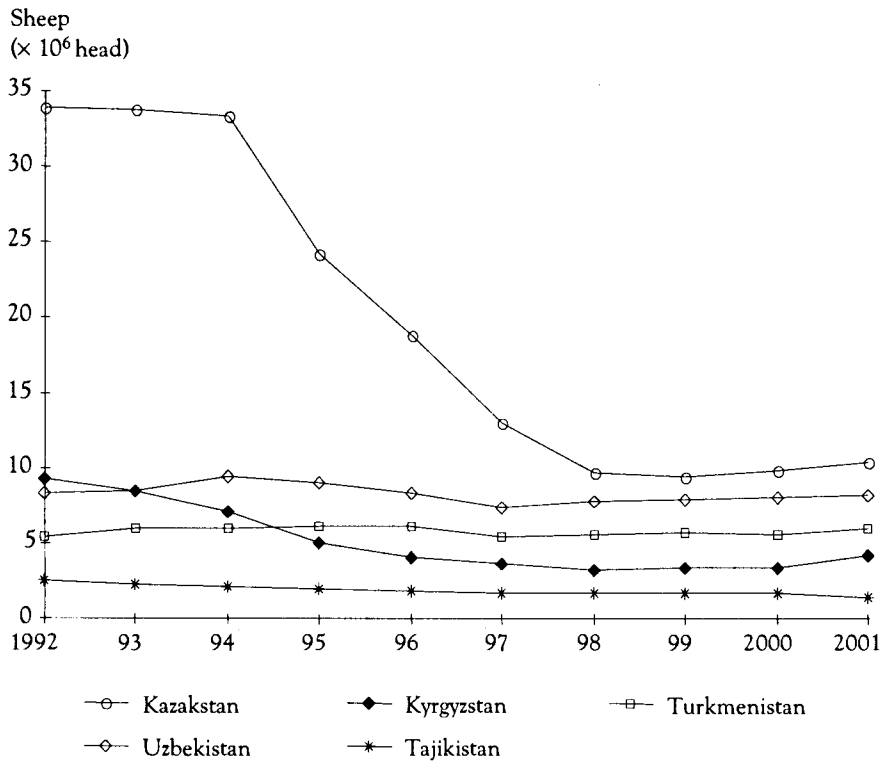
- Policies on breaking up state farms have been implemented without being replaced by government extension services for privatised farmers. There is now no link between researchers and producers, so there is little possibility for research to be realigned to farmers' priorities or for farmers to become aware of new technologies appropriate for their circumstances.
- The cessation of state purchases at fixed prices has allowed private entrepreneurs to buy, re-sell and export livestock products. However, there are no market information services that reach farmers, with the exception of Kyrgyzstan. Farmers therefore remain unaware of destination market prices particularly for wool, animal fibres and pelts that are mostly exported. This lack of information places producers in a very disadvantageous bargaining position when selling these products to local middlemen who then export or re-sell these products.
- Farm privatisation policies have also had a major negative effect on the conservation of economically-valuable breeds and strains. State farms formerly dictated breeding programmes to ensure standardised production of wool, other animal fibres and Karakul sheep pelts. With the break-up of the Soviet Union, guaranteed outlets for these products disappeared and had not been replaced by profitable new markets until the late 1990s. Privatised farmers therefore had little interest in preserving the more valuable wool breeds and strains, which are now in great danger of being lost through mortality, slaughter of animals for meat, and uncontrolled mating.
- Policies to withdraw financial support to state farms have left new smallholder privatised farmers without capital or credit to adopt new technologies, even if they are aware of these technologies. Such technologies include improved breeds, wool carding equipment etc. necessary for increasing the value of wool, other animal fibres and pelts.
- Policies on exporting livestock products are not 'business-friendly' and discourage both domestic and international entrepreneurs. Exporting is hampered by complex certification and customs procedures, and in Turkmenistan, by a dual exchange rate, which sets the official rate at less than one-third of the informal open market rate. Lack of transparency in official and business transactions also discourages wider participation, foreign investment and thus greater competition in business development. Streamlining and modernising some of these procedures and advertising a more business-friendly approach to potential investors would go far in improving returns from marketing and processing.
- Privatisation policies and financial constraints have led to the closure or greatly reduced operation of the large factories built in the Soviet period for processing wool, fibre and pelts. Those that remain open are operating at well below capacity due to debts, lack of capital and modern equipment. Their products usually do not meet

world standards. Some recent joint ventures with foreign companies have failed due to interference from local government administrations. However, after initial difficulties, a few factories are now operating successfully, with foreign investment and expertise. These factories now require better quality and larger quantities of raw fibres.

- National policies accord a low priority to supporting the scientific infrastructure and as a result, state finance for agricultural research has declined sharply since independence. National research institutes now have very limited financial resources, are losing their personnel and are unable to undertake new market-based and client-driven research.

4 Production and marketing conditions

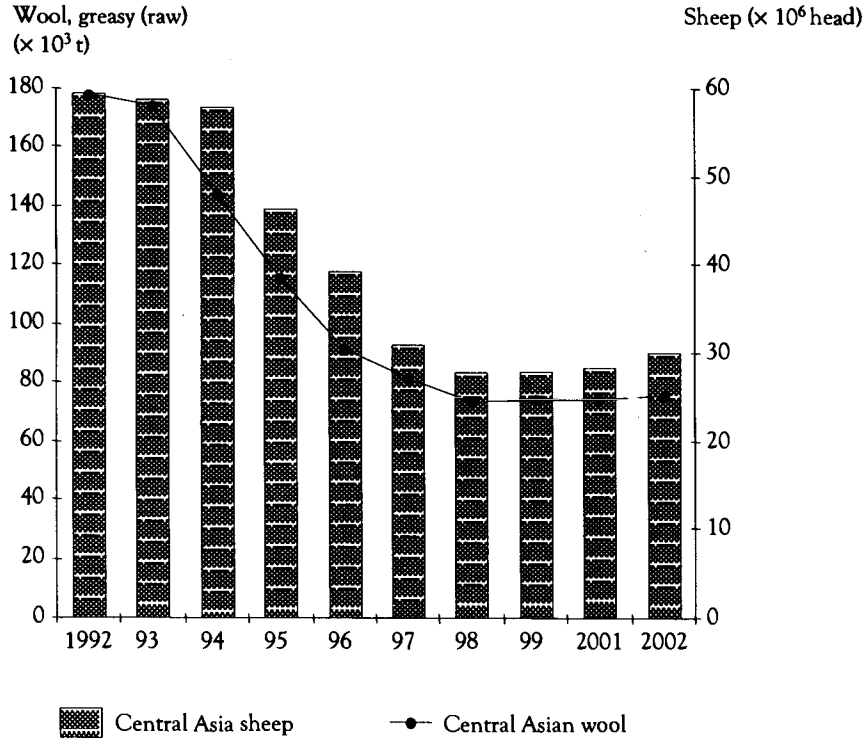
Since the collapse of the USSR, a key production issue has been the dramatic loss of smallstock, particularly sheep, in the republics of Kazakstan and Kyrgyzstan. This has accordingly meant a steep drop in wool output (Figures 2 and 3). Smallstock populations in Turkmenistan have not declined. The data for wool production is nowadays mostly estimated, as state statistics are no longer kept on wool yields. Much of the wool in the mid- to late-1990s never entered the market as there was no demand, and was stored at producers' homes or simply discarded. Producers also use some wool and other fibres for making household items such as carpets and mattresses.



Source: FAO (2002).

Figure 2. *Decline of sheep population in post-Soviet Central Asian countries, 1992–2001.*

Starting in 1999, however, there has been a positive trend in the growth of smallstock populations in the two countries that experienced the main losses, as Figures 2 and 3 indicate. Smallstock populations can rebound fairly quickly from massive destocking, and producers are now trying to retain breeding stock as the economic crisis of the mid-1990s recedes. Goats are favoured by producers for restocking, due to their faster reproductive rate compared to sheep.



Source: FAO (2002).

Figure 3. *Decline of wool production in post-Soviet Central Asian countries, 1992–2001.*

4.1 Sheep wool production

4.1.1 Kazakstan

There were around 10 million sheep in Kazakstan in 2001. As shown in Figure 2, the number of sheep has fallen sharply by two-thirds since the mid-1990s, following dislocations associated with economic policy reforms and privatisation of state collective farms (Behnke 2002; Robinson and Milner-Gulland 2002). Production of wool has therefore fallen dramatically. Nearly all sheep are now held by private smallholders or in farmers' associations formed from state farms. Approximately 40% of the remaining sheep produce fine wool, 40% coarse wool and the rest semi-fine to semi-coarse.

Few farmers have any defined wool production policy. Following the dissolution of the collective farms and loss of secure wool markets in the USSR, producers' first priorities were of necessity to slaughter sheep for meat for their own consumption and to sell sheep to earn much-needed cash. This has led to a very substantial reduction, proportionally as well as in absolute terms, in the number of superior wool-producing rams. Further, most farmers have little idea of the relative value of the wool of different breeds. The fleeces of all sheep are bulked, regardless of breed or quality, and sold only if they have a contact with a buyer or are within a short distance of an urban wool depot. Small-

holders living in more remote areas often cannot sell the wool and skins from their animals, as traders do not visit these areas and the cost of transporting products to urban markets is prohibitive. Since 2000, however, larger-scale farmers have been seeking to upgrade the quality of their fine wool sheep, due to new demand for wool from domestic processing factories and buyers from China (Kerven 2001a).

4.1.2 Turkmenistan

There are around 6 million sheep in Turkmenistan, and there has not been the dramatic decline in sheep suffered by Kazakstan and Kyrgyzstan since independence in 1991 (Figure 2). About 16 thousand tonnes of sheep wool are currently produced annually, 73% (11.5 thousand tonnes) from Karakul sheep and the remainder from Saraja sheep which have white and finer wool. This is about two-thirds of production at the close of the Soviet period.

Karakul wool is curly and of different colours; black, brown, grey and whitish, though 80% of Karakul sheep are black. Karakul wool is used by pastoralists to make mats, woollen boots, and the covering for Turkmen yurts. The grey colour wool is used to make the warp of carpets. Karakul wool is also processed and made into army clothing.

Sheep are shorn in spring and autumn. The spring clip from white Saraja sheep is from 2000 to 2500 t, which is used to make carpets domestically. In 2000, the government livestock agency, Turkmen Mallory, collected 0.5 million sheep pelts and 4500 t of wool from the state livestock farms. Private traders buy the rest, mainly for export.

Wool production is less disorganised than in Kazakstan, principally because the former collective farm structure remains in the form of associations directed by the state organisation–Turkmen Mallory. This organisation still provides some, but decreasing inputs to producers in the form of subsidised animal feed, water transport, maintenance of water points and some veterinary services (Hodjakov and Wright 2002; Lunch 2002). The ratio of privately-owned to state-owned sheep is increasing but the state still intervenes in the marketing of wool from privately-owned sheep.

4.1.3 Kyrgyzstan

In 2001 there were between 3-4 million sheep, of which about half were fine wool Merino crossbreds. After the dissolution of the state farms in mid-1990s, the number of sheep fell from nearly 11 million to 3 million, but is now beginning to rise again (Figure 2). The various local fat-tailed sheep meat breeds have become more popular than Merino fine wool sheep due to their better marketability (Kerven 2001b).

Much attention has been given to the large World Bank-funded sheep project, which has sought to revive fine wool production after the dissolution of state farms, by importing Australian Merino breeding stock. For the majority of farmers, who have only small flocks, raising meat breeds remains more profitable. The fine-wooled Merino crossbreeds are of interest to larger-scale farmers who can recently earn significant income from selling wool.

4.2 Wool marketing and processing

Kazakstan, Turkmenistan and Kyrgyzstan are not members of the International Wool Textile Organization, which would require, among other things, the ability to certify wool and fibres to internationally-accepted standards.

4.2.1 Kazakstan

An estimated 25 to 30 thousand tonnes of wool are produced annually from various different breeds of sheep ranging from coarse-wooled Karakul to fine-wooled Merino crossbreds. Production has declined to about 15% of annual production at the end of the Soviet period.

There is no longer an organised wool marketing structure in Kazakstan. Existing farmers' associations are mostly bankrupt and are being dismantled, while state depots for wool collection no longer operate, leaving the farmers with no formal channels for marketing their wool (Kerven 2002c). A few buyers collect wool from some farms, but in most cases the farmers have to seek a buyer or deliver their fleeces to a commercial wool depot in the nearest city. At some city wool depots, the fleeces are graded by representatives from the country to which the wool is to be exported (mainly to Russia) and not by national wool classers.

There were three wool-scouring plants in the Soviet period, in Taraz (formerly Djambul), Aktobe and Semipalatinsk cities. There were also four spinning mills and two wool fabric mills, one in Kustenai, northern Kazakstan and one in Kargaly, Almaty Oblast. A wool-spinning mill now operates in Aiaguz city, eastern Kazakstan and a wool carpet factory in Almaty city. There are also several small knitting factories as well as numerous cottage industries making knitted garments and mattresses from wool and camel fibre.

The state-owned processing plants where wool was formerly scoured were closed for several years after the collapse of the Soviet Union; but some have recently reopened, operating at about 10% of previous capacity. The first attempts by national and foreign investors to reopen these plants failed because of local bureaucracy and a lack of credit facilities.

In the Soviet period the Semipalatinsk Wool Scouring Plant (north-east Kazakstan) used to scour and process 30 thousand tonnes of wool annually. The factory planned to scour 3000 t of wool in 2000, producing tops. The plant employs wool collectors, collecting wool in Pavlodar, Semipalatinsk, Taldy-Korgan and Ust-Kamenogorsk Oblasts in the eastern region. In 2000 the plant had an agreement with Mongolia to process Mongolian wool. In 2001 the plant was planning to produce yarn and install spinning equipment.

The Kustenai Wool Scouring Plant reopened in 2000. The Kargaly Wool Garment Factory recently won a government tender to produce military wear. The factory purchases 500 t of raw wool from surrounding areas and manufactures 100 thousand metres of fabric per year, in 2000.

In the Soviet period, the Taraz Wool Scouring Plant was the largest of its kind in Central Asia, with a capacity of scouring 150-200 t of wool per day. Wool was scoured

in Uzbekistan, Kyrgyzstan and southern Kazakstan, as well as imported from Australia. Several years ago, a UK company invested in a joint venture project with this factory, but the local administration proved difficult and the UK company withdrew, having lost some of its capital. New foreign investment and technical expertise is now rehabilitating the scouring plant. In 2000 three scouring machines were in working condition with a total capacity of scouring 20–25 t of wool per day. The factory did not, however, have any funds to buy wool in 2001. Clients bring their own wool to the factory for scouring and dyeing. The factory had huge debts and was involved in legal disputes. However, the new foreign-supplied equipment, expertise and investment is expected to allow this factory to expand production in the near future.

4.2.2 Turkmenistan

There are two large state-owned wool-processing factories, both started operating in 2002. The Ashgabad Wool Spinning Factory is working at nearly full capacity, spinning and dyeing white Saraja wool into yarn used for carpet weaving. In 1999 the factory processed 3000 t of Saraja wool. There were about 300 employees. The factory is state-owned but is now leased to the manager. A new carpet-making venture has begun, with carpets being sold to Europe at US$ 70/m^2.

The Mary Wool Scouring Plant is government-owned, employing 1000 workers. In 2002 this factory was planned to be privatised, with foreign investment. The factory scours about 12 thousand tonnes per year, some of which comes from Uzbekistan. Some of the equipment dates from the mid-1930s and is no longer functioning; therefore the factory cannot work to maximum capacity of 17 thousand tonnes per year. Most of the washed wool is Karakul (80%), Saraja white wool (18%), and the remaining 2% is camel and goat hair. The washed white wool mainly goes to the spinning factory in Ashgabad. Only about 10–15% of the washed wool is used in Turkmenistan, the rest being exported to Russia, Pakistan, India and Poland. Karakul wool is exported mainly to Russia for making felt boots and to India for making blankets. The factory also has a carpet-making section.

The state-owned organisation, Turkmen Mallory, markets the wool from state-owned sheep. The prices paid to farmers are, however, very low, due partly to the many layers of administration in the state organisation and the consequently high overhead costs. Table 3 shows the gap between producer prices and those charged by Turkmen Mallory for export. Wool from the main carpet wool breed (Saraja) and from Karakul sheep is marketed separately, mostly through the state system, but there is no grading of fleeces of different quality within the two major breeds.

4.2.3 Kyrgyzstan

There is one large wool scouring plant and two large privatised wool spinning plants, none of which can operate anywhere near capacity due to the shortage in wool supplies since

independence. The largest plant, Kasiet in the town of Tokmak, operated at only about 10% of its capacity in 2000, and had to purchase about 60% of the raw washed wool from Kazakstan and South America. A private wool manufacturing company in Bishkek operated at about one-third capacity in the same year. Formerly there were several other smaller state-owned wool-manufacturing factories, but these were mostly bankrupt by 2001.

Apart from an overall shortfall in wool supplies, the wool currently sold by producers is usually not sorted or of good enough quality, causing technical difficulties for processing at the factories. Under these conditions, the factories are unable to make high-value products, or to export to the most profitable markets in Europe. The main priority for the wool industry is to upgrade the quality of the raw product and train producers as well as traders in how to sort wool.

4.3 Camel hair

Government sources estimate the camel populations of Kazakstan and Turkmenistan at about 400 thousand and 110 thousand, respectively, although it is probable that these figures are considerable underestimates. Camels are not kept in Kyrgyzstan.

A factory in Almaty, Kazakstan, recently started processing camel hair and manufacturing this into blankets for export to the Far East, using new processing equipment. Most camel hair was bought from Mangistau Oblast in western Kazakstan, which has the main camel population.

Hair from the Bactrian camel is made up of three different fibre types that require specialist equipment to separate, that has not been available in Central Asia. According to scientists in Turkmenistan, 75–80% of camel hair is fine fibre, 15–20% is middle quality, and 5–10% consists of coarse fibres. The average diameter for fine fibre is 16–20 microns, for middle fibre is 25–30 microns, and coarse fibre 31–50 microns. The length of fine fibre is 3–5 cm, for middle fibre is 4–6 cm, and coarse fibre is 8–10 cm. One-year old camels yield finer fibre than these figures indicate. The finest diameter fibre comprises about 50% of the fleece and is worth more on international markets. At present no attempt is made to grade the camel hair either by age of animal (young camels produce finer fleeces than older animals) or by the area of the body from which the fibre is shorn (the fibre from the flanks is finer than that from the neck and legs). Farmers and scientists are aware of these differences in fibre quality, but it appears that the exporters are not, and offer only very low price regardless of quality.

4.4 Goat fibre

Cashmere down is produced from the native Central Asian goats (Millar 1986). With the goal of increasing yield per animal, state researchers started to breed a new type of downy goat in 1938 by crossing the native goat with Russian Pridon and Angora-type goats (Almeev 1973). These new breeds were distributed to most state farms in Kazakstan and Kyrgyzstan. The down was sent to Orenburg and Moscow for processing during Soviet times.

The price of cashmere on the world market is very sensitive to fibre diameter among other characteristics. The finer the diameter, the higher the value. The Pridon bred

downy goat has a coarser fibre (between 18–21 microns) than the native Kyrgyz goat, with an average diameter of 14–15 microns (Almeev 2000). The native goat therefore produces a more valuable commercial fibre.

During and after the Soviet period, many of the native goats have interbred with introduced breeds. The effect will have been an increase of the fibre diameter in goats of mixed breed. Most farmers, now keeping goats privately, no longer have a pure strain of native cashmere-bearing goats. The down from these mixed breeds has accordingly little market value, compared to true cashmere which should have a fibre diameter of less than 16 microns. However, in a few remote areas, there was little or no interbreeding between the native and introduced goats. The down from the native goats which have not been inter-bred with Pridon-Angoras is, in fact, cashmere, and as such has considerable potential value.

Kyrgyzstan has around half a million goats, mostly crossbred with Angora types. Turkmenistan has an estimated 370 thousand native goats and 30 thousand Angora type. In Kazakstan, the population of goats has actually increased from 0.9 million in 1990 to 1.5 million in 2000, as newly-privatised farmers find goats easier and cheaper to keep than sheep.

Kazakstan has the capacity to produce annually between 80–100 t of high-quality down or cashmere, according to the leading national scientist (Aryngaziev 1998). About 75–80% of the goats are crossbred types. Animals with the highest down production were found in western Kazakstan (Eidrigevich 1951).

The genetic resources of Kazak local goats have been conserved better in the more arid regions designated in Soviet periods for fat-rumped and Karakul sheep breeding. During the Soviet period, regions with higher precipitation and better pasture (south-eastern, northern and north-eastern regions) were planned for wool production and were therefore stocked with fine-woolled and semi-fine-woolled sheep. In these regions, the number of goats was reduced sharply from 2.7 million down to 0.5 million head between 1955–68, when the fine wool industry was developed, as the government prohibited the keeping of goats in these regions to prevent the contamination of sheep wool with coarse goat fibres.

There has been no programme on selection and breeding of cashmere goats or on production and marketing of their down in these countries. In 2001, a small cashmere breeding project was initiated with British Embassy funding in Kazakstan and Kyrgyzstan, with technical advice from Macaulay Institute, UK. The worth of this cashmere fibre has not been appreciated until very recently, and indeed even now only a few national scientists realise that the fibre produced by their native goats is cashmere. This is surprising in that some of the world's highest quality cashmere comes from western China, (which borders eastern Kazakstan), Iran and Afghanistan, which lie immediately south of Turkmenistan. These regions have long been internationally recognised as cashmere-producing countries.

There is a need to conduct, in each country, an audit of the native goat populations with respect to numbers and fibre characteristics, principally weights of fibre produced per animal, fibre diameters, and ratios (by weight) of fine and coarse hair to determine the potential value of this resource.

4.5 Karakul pelts

There are approximately 4.4 million Karakul sheep in Turkmenistan, mainly owned by the state and leased to shepherds, and some 1.5 million in southern Kazakstan, almost all now in private hands. Karakul sheep, being adapted to arid desert conditions, are not kept on the predominantly highland pastures of Kyrgyzstan. Uzbekistan has a large population of Karakul sheep. Karakul sheep have been kept primarily for meat and the production of pelts (Astrakhan) from lambs slaughtered at birth or, in some cases, deliberately aborted before birth. Their coarse wool is of relatively low value compared with that from other breeds, and is mostly used to make felt.

During and before the Soviet period, large numbers of Central Asian Karakul pelts were exported to Russia and from there to western countries. This trade has now largely ceased in Turkmenistan due to a new presidential decree in 2000. The trade has also declined in Kazakstan as a consequence of the demise of the former USSR state purchasing and distribution system. Final processing and manufacture of pelts into garments was carried out in Russia in the Soviet period, and Russian buyers are still the main purchasers of raw pelts from Central Asia. It has been difficult for Central Asians to enter the profitable European market where the world's Karakul pelts are traded.

Since independence, Turkmenistan has produced some 750-770 thousand Karakul adult pelts annually until 2000. A small amount was used by private small industries for lining coats and the major amount was exported. Turkmenistan has a state-owned pelt processing plant, which can only process 15% of annual pelt production, while quality of products is poor. The small number of young animal pelts produced were exported mainly to Russia in the raw state. The depressed state of the Karakul industry in Turkmenistan has been exacerbated by the presidential decree in 2000 banning the slaughter of Karakul lambs until such time as the size of the breeding flock is significantly increased. Only pelts from stillborn lambs and lambs dying within a few days of birth are currently traded. One company interviewed said it handled some 100 thousand pelts in 1999; in 2000 it was able to collect only 15 thousand pelts and faced severe financial problems, having borrowed US$ 500 thousand to purchase processing equipment which is unlikely to be used in the foreseeable future.

Efforts are currently being made to increase the number of Karakul sheep in both countries. As indicated above, this is being achieved in Turkmenistan by a ban on slaughtering of newborn lambs. In Kazakstan herders are trying to increase Karakul sheep in the desert regions, as these are well adapted to the environment and their meat has a market premium. There is also a government-financed initiative in Kazakstan to bring 10 thousand Karakul sheep from Uzbekistan and southern Kazakstan.

Nationally there is still a considerable body of knowledge and expertise in the breeding of Karakul sheep. In Kazakstan there is an Institute of Karakul Breeding, near Shimkeynt city, and a Karakul Department at the Animal Husbandry Institute in Turkmenistan. The inheritance of rare and highly valued pelt types appears to be well understood by national scientists, although no breeding schemes to increase the proportion of these types in the national flocks seem to be practised. The scientists

formerly working on Karakul breeding are adamant that the desirable genes for these rare pelt types have been retained in the depleted flocks, and that they have some highly valued types not found in other Karakul pelt producing countries such as Namibia. This resource has considerable potential for exploitation.

4.6 National prices and export data

Producer prices vary widely by distance from the export point or processing factories. Due to the sparse rural population and great distances between towns in these countries, there is considerable transport cost for collecting raw products. Thus wool and fibre prices are generally higher for farmers located nearer to processing factories or borders with China and Russia—two main destinations. Conversely, farmers living in remote areas far from the nearest city are either unable to sell their products at all or else receive very low prices from itinerant traders, due to the cost of transport. Costs would be lowered if producers contracted vehicles to transport their products to cities, but this is not practised except in Turkmenistan, where there is greater social cohesion.

The following prices (Tables 1 and 2) were obtained from producers in two regions of Kazakstan, one within several hundred km of Almaty, the main city and wool collection centre, and the other region more than 300 km from the nearest city and 500 km from Almaty. Lower prices are those in the more remote region.

Table 1. *Kazakstan wool, animal fibre and pelt prices, 2000 and 2001 (US$ per kg or pelt).*

Type of wool or animal fibre	Producer price 2000	Producer price 2001	Trader price 2000
Coarse wool	0.3	0.1	na
Semi-fine/fine wool	0.6	1.0	1.5
Camel hair	0.5	0.25	1.0
Goat hair, angora and mixed	0.85-1.25	2.0	na
Goat hair, native downy	0.7-1.2	5-17	1.7
Karakul black pelts	1.4 (in 1999)	na	15.0-20.0
Sheep and goat skins	0.7	na	na

Source: Data from interviews. Trader prices are those received by traders when selling to an exporter.
na = Data not available.

The prices in Table 3 were obtained from producers in two regions of Turkmenistan, one within several hours drive of the capital, Ashgabad, the other more remote. Lower prices are those in the more remote region.

4.6.1 Wool prices

Information on prices and trends from official national statistics has been unreliable since the mid-1990s when state farms were abolished. Most wool is currently sold by producers for cash to traders, with very little or no official documentation, in order to

Table 2. *Wool and animal fibre exports, Kazakstan.*

Wool and animal fibres exports by country	1998	1999
Value of all exports (US$ × 10^3)	5,435,763.30	5,592,237.50
Wool, not processed:	0.09% value of all exports	0.12% value of all exports
Total exported: tonnes	8012.90	15,697.60
US$ × 10^3	5128.30	6691.50
To Russia: tonnes	3266.00	10,457.60
US$ × 10^3	1940.30	4126.30
To other NIS* countries: (Byelorussia, Kyrgyzstan, Tadjikistan, Azerbajan, Uzbekistan): tonnes	74.3	248.7
US$ × 10^3	63.8	226.7
To other countries: (Belgium, Hungary, Germany, Italy, Turkey, China, India, Poland, Afghanistan): tonnes	4672.60	4991.30
US$ × 10^3	3124.20	2238.50
Coarse and fine animal fibre:		
Total exported: tonnes	218.5	145.1
US$ × 10^3	139.3	104.3
To Russia: tonnes	102.1	131.1
US$ × 10^3	38.3	94.0
To China: tonnes	104.0	14.0
US$ × 10^3	97.0	10.3
To Turkey: tonnes	12.4	
US$ × 10^3	4.0	

Source: National Bank of Kazakstan, unpublished export data (2000), from interviews.
* NIS = newly independent states.

Table 3. *Turkmenistan wool, animal fibre and pelt prices in 2000 (US$ per kg or pelt).*

Type of wool or animal fibre	Producer price	Official or traders' export price
First quality white Saraja wool		0.50 (traders)
White Saraja wool	0.27	1.2 (official)
Karakul wool	0.08	0.6–1.0
Camel hair	0.05–0.54	1.0 (official)
		0.85–1.10 (traders)
Angora goat hair	na	0.45–0.50
Native goat hair	0.25–0.55 (in 2000)	0.35–0.45 (official)
	0.70–1.15 (in 2001)	1.70 (traders in 2000)
Black Karakul pelt	2.7	na
First grade Karakul pelt		8.0 (official)
Fourth to second grade Karakul pelt		4.0–7.0 (official)
Sur Karakul pelt		15.0 (Ashgabad market)

Source: Data from interviews, May 2000. The official price is that set for exporters by Turkmen Mallory, the state livestock organisation. Traders' prices are those received by the trader when exporting.
na = Data not available

avoid high levels of taxation and extortion. Most wool being traded internationally from Kyrgyzstan and Kazakstan leaves via Russia or China. Often the deals are not made in cash, but involve barter of the wool for other products. Wool from Turkmenistan is exported mainly to the Indian sub-continent and Russia.

In Kazakstan by 2001, farm gate prices in Almaty Oblast (south-east Kazakstan) for fine wool had doubled from 1999/2000, to more than US$ 0.70/kg greasy wool. Buyers have indicated that they would be prepared to offer higher prices for larger lots. In 2000 the Semipalatinsk wool factory in north-east Kazakstan was paying from US$ 0.80/kg for coarse wool up to US$ 0.85/kg for fine wool. In the same year, the wool factory in Kustenai, north-west Kazakstan, was buying semi-fine wool at US$ 0.40/kg and reselling to Italy at US$ 1.50/kg without processing.

4.6.2 Goat fibre and cashmere prices

Since 1999, there has been a considerable rise in demand from Chinese manufacturers for goat fibre (including fine down or cashmere) from Kyrgyzstan and Kazakstan. Demand is less in Turkmenistan, which does not border with China. Chinese buyers purchase cashmere from local traders, who in turn buy and collect cashmere from goat producers in villages. Larger-scale traders grade by colour and appearance of the cashmere submitted by their smaller-scale collectors, according to prices offered from the Chinese buyers.

Traders first began buying cashmere from Central Asian producers in 1995, when there was a high demand and prices were good (see Figure 9 below). In 1996-98 demand declined. Prices rose in 1999, and in 2000 rose swiftly during the short buying season in March and April. In Kyrgyzstan, for example, at the beginning of the 2000 season when farmers start combing the down from their goats, the price was US$ 4.6/kg. Competing traders bid up the producer price to US$ 20/kg by mid-April, when there was no more down left to buy. In March 2001, the opening price in Bishkek for the best black cashmere at the start of the season was US$ 17/kg and was expected by traders to reach at least US$ 24/kg.

One of the problems for poorer farmers in maximising their income from selling cashmere is the practice used by many traders of offering advance payments to farmers before the down collection season. If a farmer accepts the advance payment, he/she is then obliged to sell at a pre-arranged price. Since the demand for cashmere over the season means that new traders will continually raise the price, a farmer locked into an advance payment scheme loses out.

In Turkmenistan one buyer in 2000 was paying producers US$ 0.7/kg for shorn goat hair (including coarse outer and down), and after some rudimentary sorting and baling, was selling it to Afghan buyers for US$ 1.7/kg. This is a relatively modest margin, considering that he has to pay for the collection of the fibre from the farms and the costs of baling. By 2001, producers were selling mixed fibre with down at up to double the price of the previous year, due to increasing demand. Producers who were willing to separate the down from the coarse outer fibre obtained up to US$ 1.25/kg for the down.

Herders noted that goat fibre has been in greater demand than sheep wool since about 1999. Nevertheless, producer prices in Turkmenistan were far below those in Kazakstan and Kyrgyzstan in the same year.

4.6.3 Karakul prices

Current domestic prices for Karakul pelts are low. Farmers in Turkmenistan received on average about US$ 3 per pelt, although rarer types command higher prices. In central Kazakstan, farmers received only US$ 1.4 per pelt in 1999 and there has been no demand for pelts since then. Some rare and highly sought-after types (e.g. the golden coloured '*sur*' pelts) are quite valuable.

In Turkmenistan, processed Karakul wool was exported to Russia at a price of US$ 0.15 per kg in 2000.

The fleeces of adult Karakul sheep are sometimes traded internationally. This wool is black or dark brown, coarse, and used in the manufacture of low-quality carpets. It is worth about US$ 0.35/kg in the UK, which would not cover the cost of shipping (D.B. Holdsworth, personal communication).

4.6.4 Camel hair prices

In Turkmenistan substantial quantities of camel hair are exported. One buyer alone exported 200 t per year by 2000, of which 100 t went to an outlet in Germany at a price of US$ 1.10/kg. The price paid to producers in 2000 was between US$ 0.05 to 0.50/kg depending on quality.

In Kazakstan, the main camel hair factory exported 50 t of raw camel wool to Korea in 2000. Prices offered by the factory to traders for raw camel wool were US$ 1.50/kg, although the factory would pay US$2/kg for sorted camel wool. Local herders in Almaty Oblast, however, reported receiving only US$ 0.20/kg.

Marketing channels for Central Asian camel hair follow a similar route to cashmere. Turkmenistan is a more significant exporter of camel hair than Kazakstan, and most of the fibre is dehaired in China. Camel hair is a coarser product than cashmere. Internationally it is usually traded in three grades: Super Baby (18 µm), Medium Baby (20 µm) and Adult (23–24 µm). The higher mean fibre diameter of camel hair, and the more exacting processing requirements are reflected in a much lower price. According to UK importers, raw fibre prices quoted by traders in Central Asia in 2000 are in the region of US$ 2–3/kg greasy.

5 International commercial potential, demand and price trends

5.1 International standards for wool and fibre assessment

Wool and other animal fibres are traded and priced on the international market according to a number of special criteria. These include fibre diameter, expressed in microns (μm), fibre length, lustre ('shinyness'), crimp ('wavyness'), and percentage yield of clean fibre from raw fibre, following scouring (washing) to remove vegetable and mineral contaminants and wool grease. In the case of cashmere, 'yield' is the percentage of clean down fibre left after removal of the coarse outer coat from the fine downy undercoat.

5.2 Wool

Prices are shown here are for greasy wool/fibre, which is the unwashed raw product. A comparison of terms used to describe wools by their fibre diameter is given in Table 4. Coarse wools primarily used for making carpets are in the range exceeding 30 μm. Trade prices are highly sensitive to quality characteristics, as established through measurement of these criteria for every consignment of wool/fibre.

Table 4. *Comparison of grading systems for wool.*

Fibre diameter range (micron, μm)	Australia	New Zealand
17-20	Superfine	
21-24	Merino	Fine
25-30	Fine crossbred	Medium
>31	Crossbred	Strong

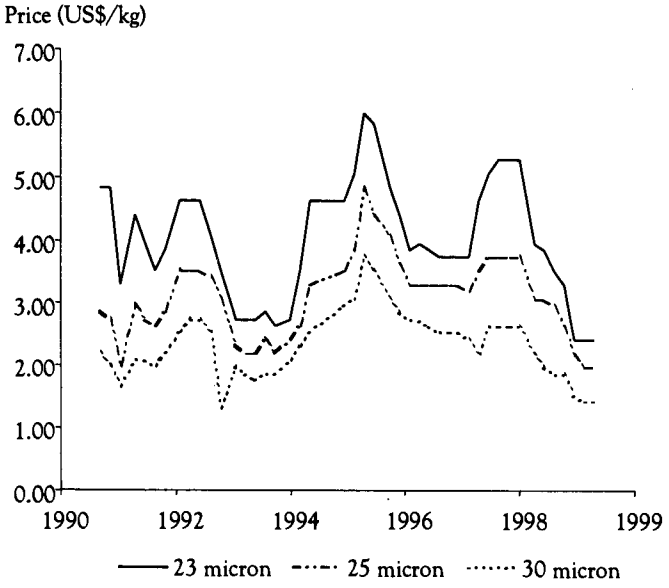
The wool sold by producers in Kazakstan and Kyrgyzstan includes fine, medium and strong types. For producers to meet the quality criteria demanded by the textile trade, it is necessary for their wool and fibre output to be sorted, graded and tested to internationally recognised standards. During the 1990s, most wool and fibre produced by farmers in Kazakstan, Kyrgyzstan and Turkmenistan was sold in bulk in undifferentiated lots to national buyers, who paid the lowest price based on the lowest grade, despite the inclusion of higher-quality fibres. Under this system, there was no price premium to producers for selling higher quality fibres. Moreover, national buyers and government livestock officials are not generally aware of the world market values for the products. Therefore they are unable to pass this information on to producers. Producers therefore have no incentive to sort wool/fibre according to market values for different qualities. In

Kyrgyzstan, there is a market price information bulletin that lists world prices for agricultural commodities, but producers rarely receive this information.

However, rehabilitated national wool processing factories in Kazakstan and Kyrgyzstan have started offering premium prices for better-quality fine wool. The problem remains, however, that neither producers nor most local traders know how to sort wool into the relevant grades.

Previously, in the Soviet period, state farms organised for wool and fibre to be sorted at source, bulked by grade at regional rural centres and tested for quality at national research laboratories. Some was then exported to countries outside the Soviet Union. For example, the Soviet Union formerly supplied about one-quarter of the camel hair sold outside the Union. This state system has completely broken down in the three countries.

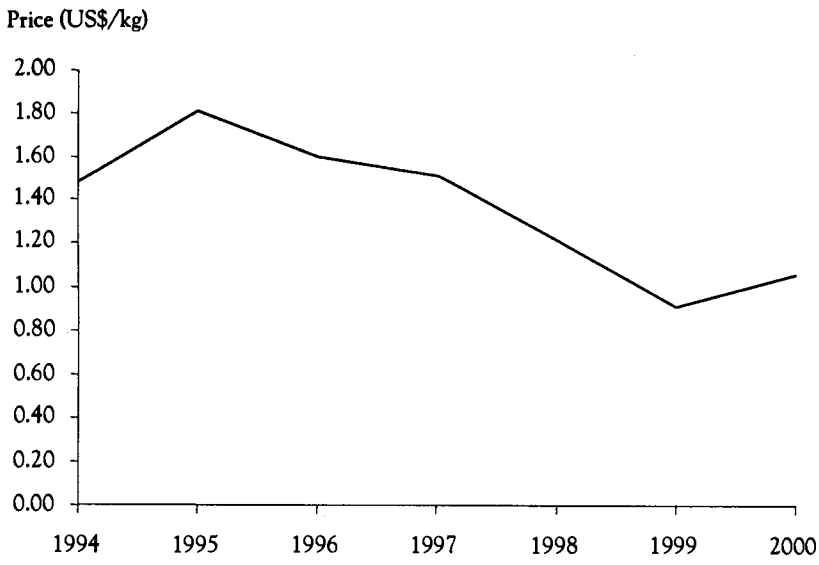
The last 10 years have seen marked fluctuations in wool price, as the wool trade has suffered increasing competition from synthetic fibres. The lower raw wool prices have not stimulated greater demand, and global textile industry consumption of wool has also continued to decline. These trends are illustrated in Figure 4, which shows the trends in international quotations for three grades of US wool.



Source: Wool Record (2002).

Figure 4. *Prices for three grades of US raw wool, 1991–1998.*

Prices in Figure 5 are the mean selling prices for fine and semi-fine wools at the Bradford wool auctions in UK. Starting in mid-2001, prices for wool have been rising again, with a quoted price of US$ 1.00 approximately for raw wool of the semi-fine type in early 2002 (Wool Record 2002). World prices for fine wool in particular are reported to have risen (IWTO 2002).



Source: British Wool Marketing Board, personal communication.
Figure 5. *Bradford, UK, wool indicator prices, 1994–2000.*

5.2.1 Consumer trends

The amount of real personal income allocated to discretionary consumer expenditure has declined in most countries (USA and UK being exceptions) over the past decade. Moreover, apparel's share of that expenditure is being eroded as consumers choose to direct more of their income to travel, home electronics and other recreational activities.

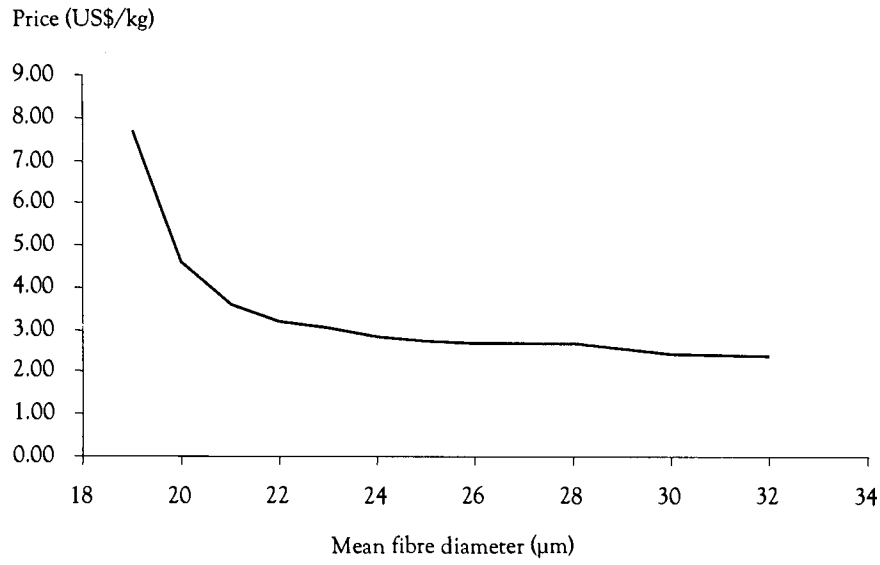
Changing fashions have seen an increased shift from formal wear (wool's stronghold) to smart casual and relaxing leisure wear, and this trend is expected to continue in the foreseeable future. Surveys by the Woolmark Company have shown that consumers in wool's target market still wish to look good and feel confident in their business clothes, but they wish to exercise greater freedom of choice than is offered by coats, suits and skirts.

Other product features being sought by consumers, which will impinge on wool's long-term suitability as a textile fibre, include:

- Softness–handle and next-to-skin comfort
- Light weight–average weights of both worsted and woollen fabrics have declined by up to 15% over the past 10 years
- Easy care–has assumed greater priority in order to create more time for leisure.

These market changes suggest that there is possibly a good future for fine and superfine wools, and for other qualities that have potential for use in innovative products. Poorer quality wools are likely to continue to lose market share to synthetic alternatives.

World wool production reached a 40-year low in 1999, and Woolmark estimate tha. there will be further reductions over the next two years. During 2000, the market for Merino wools at least picked up, reflecting concern at low fresh-wool supplies, and a Chinese policy to stockpile wool. The price range per grade of Australian wool is given in Figure 6. The Australian market indicator price for clean wool in June 2000 was US$ 4.25/kg.



Source: Wool Record (2002).

Figure 6. *Price range per fibre diameter for Australian Merino wool, June 2000.*

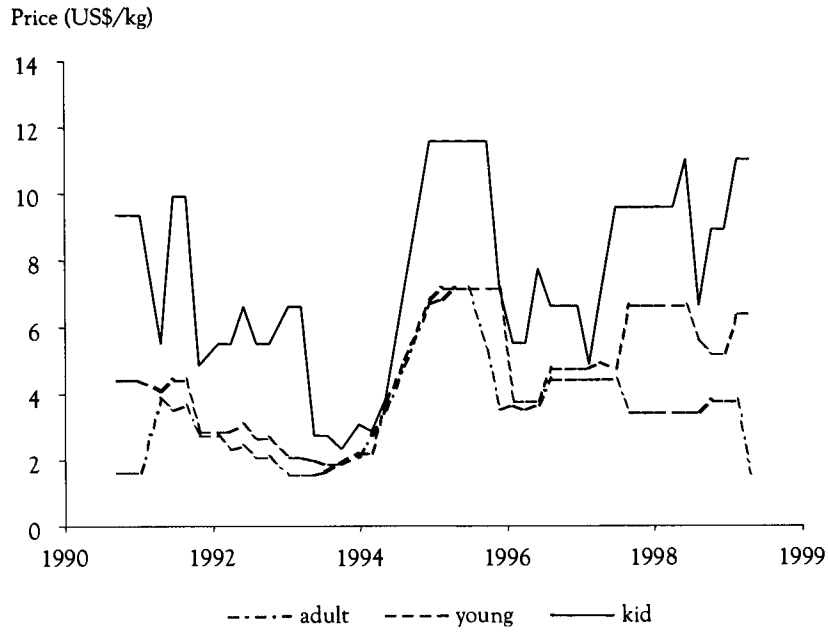
5.3 Mohair

The Angora goat produces a high proportion of its fleece (>99%) from secondary hair follicles. This fibre, mohair, is coarser (20–40 μm) than cashmere, and differs in many important quality characteristics. Mohair is lustrous, and the fibres have a wave, rather than the tight crimp of cashmere. Angora goats typically produce 3–4 kg fibre per year, harvested every six months by shearing. The crossbred Soviet goat breeds introduced in Kazakstan and Kyrgyzstan include Angora types.

Central Asian mohair is traded internationally in small amounts. No quantitative information was found on prices and volumes shipped, but it is thought that most is used in China (D.B. Holdsworth, personal communication). Central Asian mohair is coarse and has a low yield in comparison to that originating in the main producer regions of South Africa, Texas and Turkey, and this is a serious impediment to trade with western merchants and processors.

The industrial demand and price for mohair is vulnerable to cyclic variations in fashion. Heavy downward pressure on prices has resulted in difficult trading conditions and poor profitability for producers in the main production areas—South Africa (60% of

total) and Texas. World production fell by about one-third during the 1990s (Alfa Tops, personal communication). Premium prices are paid only for the best quality fibre. Figure 7 gives recent prices.



Source: Wool Record (2002).

Figure 7. *Prices for three grades of Texan mohair, 1991–99.*

The prices for South African mohair in June 2000 are given in Table 7, section 5.5. The current strong market for finer grades has tended to direct much of the international trade towards South African mohair. Output is not forecasted to rise from the current level of 4.5 million kg (Mohair South Africa, reported in Wool Record 2002).

5.4 Karakul pelts

Karakul pelts are mainly sold semi-annually at auctions in western Europe. For the past few years these have been held at the Danish Fur Centre in Copenhagen. Since the break-up of the Soviet Union, few pelts from Central Asia reach the European auctions, and those that do are sold by Russian firms. For example, a German firm purchases pelts from Uzbekistan through a Moscow firm.

Two countries—Afghanistan and Namibia—now dominate the international pelt auctions (Table 5). Namibia markets all its Karakul pelts through the trademark 'Swakara', organised by the Karakul Producers Association which ensures strict quality, grading controls and fair prices to producers. In 2001, some 335 thousand pelts were auctioned, of which 60% were supplied from Afghanistan, with the remainder from

Namibia. It is possible that some pelts designated from Afghanistan may in fact originate from Central Asia.

Table 5. *Price per Karakul pelts, 2000.*

Type of Karakul pelt	No. sold (Dec. 1999–June 2000)	June 2000 average price per pelt (US$)	Dec. 2000 average price per pelt (US$)
Grey Afghan	49,100	14.9	19.6
Black Afghan	30,000	12.5	13.4
Black broadtail (origin not stated)	1000	27.1	na
Grey broadtail (origin not stated)	2150	24.0	40.2
Sur (mixed colour golden) Afghan	3100	12.8	12.8
Swakara (Namibian) black regular	60,100	26.9	22.7
Swakara grey regular	5500	28.5	na

Source: Danish Fur Centre (2002).
na = Data not available

5.5 Cashmere

In most breeds of goat, there is a high proportion of coarse fibres (>30 μm) derived from primary hair follicles, together with variable proportions of finer undercoat fibres (12–25 μm) produced by the surrounding secondary follicles. These breeds are said to be double-coated. Some of the hardier breeds of goat produce a high proportion of this undercoat (around 30–50% by weight) with a mean diameter less than 18.5 μm, which can be harvested, either by combing or shearing and separated in an industrial process (dehairing) as cashmere down from the coarse guard hair. Goats that have been selected for cashmere production grow typically between 100–350 g of down/head per year—one of the most luxurious, and valuable of all animal fibres.

World cashmeres are judged against the industry standard, which is Chinese white. This grade accounts for some 50% of all cashmere produced in the world. Mongolia is the second biggest producer of cashmere. Cashmere buyers have tight specifications for quality based on a number of parameters, most importantly: mean fibre diameter, the diameter distribution of fibres in the fleece, degree of crimp and lustre. The quality of all cashmeres is defined by their similarity to Chinese white. This has important implications for the breeding strategies for cashmere goats in other countries. In particular, it limits the use of animals carrying Angora genes which, though tending to have a higher yield, such as some of the Russian breeds e.g. Don and Altai Mountain goats (500–650 g and 450–600 g cashmere down/year, respectively), are often coarse and lustrous, with intermediate fibres, which make adequate separation of down from guard hair difficult.

The cashmere currently being sold by producers in Central Asia derives from cross-bred Soviet breeds with Angora characteristics and is usually a coarse product, with a mean fibre diameter in the region of 19–19.5 μm. The fibre is sold to dealers, and

eventually reaches dehairing plants in China and Mongolia. In 2000 there were no dehairing plants in Turkmenistan, Kazakstan or Kyrgyzstan. By 2001, at least two small plants had opened in Kazakstan, and one was being planned in Kyrgyzstan. In 2000 the price paid by international importers to traders in Kazakstan for undehaired raw cashmere was in the region of US$ 17/kg raw, up from US$ 10/kg in 1999 (D.B. Holdsworth, personal communication). The prices paid for the dehaired fibre reflect the mean fibre diameter of the product (Table 6). The coarseness and character of Central Asian fibre, which has some mohair characteristics due to the Soviet crossbreed influence, make it unattractive to many of the major companies that specialise in cashmere manufacture. Figure 8 shows market women sorting raw cashemere in Kazakstan.

Figure 8. *Market women sorting raw cashmere in Taraz, Kazakstan.*

Table 6. *Local trade prices for dehaired cashmere from different sources.*

Source of cashmere	Price in 2000 (US$/kg)
Mongolia (14–15.5 μm)	105
Iran (17.5–18 μm)	75
Kazakstan (19– 19.5 μm)	50

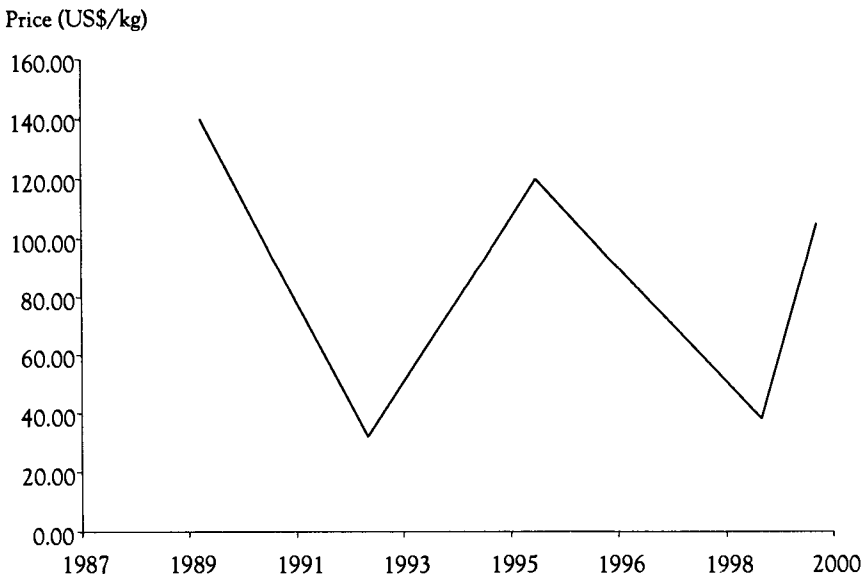
Source: D.B. Holdsworth, personal communication.

Table 7. *Prices of raw South African mohair, June 2000.*

Grade	Price (US$/kg)
Kid (23–27 μm)	17.6
Young goat (27–29 μm)	9.1
Fine adult (30–32 μm)	5.1
Adult (33–37 μm)	3.2

Source: Alfa Tops, personal communication, and Wool Record (2002).

Figure 9 illustrates the marked fluctuation in prices, considered in the industry to have been following a 5–6 year cycle. Prices shown are trade wholesale prices, not producer prices. These cyclical fluctuations are a major problem for producers. The pattern of peaks and lows has a number of causes. One of these is the tendency of companies to stockpile cashmere during times when the price is relatively low. This pushes prices up for a time, but is then immediately followed by a drop in industry demand. In 1998, low prices prompted Chinese farmers to cull goats, and the Chinese national herd was reduced by 25%. The upturn in prices through 1999 was stimulated by Chinese mills processing cashmere for sweaters in the USA, which experienced a surge in demand for quality knitwear. By 2000 demand was heavy, reflected in higher prices (Figure 10).

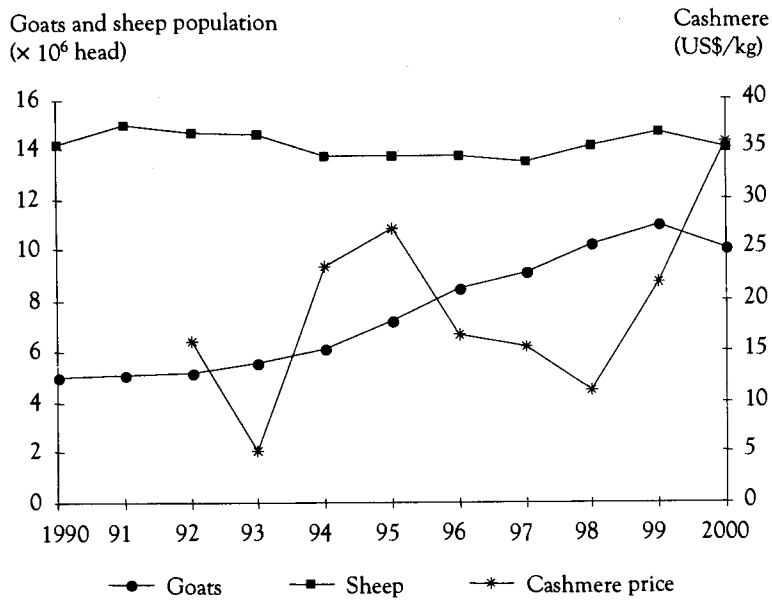


Source: D.B. Holdsworth, personal communication.

Figure 9. *Evolution of cashmere wholesale prices (US$/kg, dehaired Mongolian, 16 μm).*

5.6 International interest in importing from Central Asia

All companies consulted reported the lack of reliable financial institutions to be the primary reason inhibiting willingness to trade in fibre and pelt products from Central



Note: Price is for raw cashmere paid to herders.
Sources: Bakey et al. (2001); FAO (2002).
Figure 10. *Goats and sheep population and cashmere prices in Mongolia, 1992–2000.*

Asia. All companies that did use Central Asian fibre products acquired this fibre via an intermediary country, mainly China, Mongolia or Russia. This is probably because the level of trade in other products between these countries permits deals to be made on the basis of barter for other commodities, without the need for a cash transaction. This option is not normally open to western industrial buyers. Facilities for handling and guaranteeing bank transactions for purchase of fibre are not trusted, and processors expressed reluctance to strike big deals using cash payments.

For example, a large Karakul pelt importer in Germany was buying pelts originating from Uzbekistan marketed through Russia. This company would be interested in buying directly from Central Asia but only if the pelts were sent to a forwarding agent in Germany and payment would be completed only after inspection in Germany. Certificates of origin and veterinary control are required to import pelts into the EU.

The Namibian Karakul Association has expressed keen interest over the past five years to establish links with Central Asian Karakul research institutes, and to develop marketing and processing joint ventures with Central Asian Karakul producers and entrepreneurs. The Namibian Karakul Association is a government-sponsored farmers' union, which purchases and sorts Namibian Karakul pelts, marketing them internationally under the brand name of Swakara. Karakul production is limited in Namibia, which also lacks some of the more valuable genotypyes developed by Central Asian researchers. The Association also wishes to carry out exchanges of genetic material with Central Asia and to give technical advice on processing pelts to Central Asian firms.

Wool, cashmere and mohair, currently available from Central Asia, were considered to be of inferior quality to more easily available alternatives from other countries, further reducing the price that companies would expect to pay. A noted decline in quality has occurred since the collapse of the Soviet Union. A leading USA cashmere company reported that they used to buy cashmere and camel hair during the Soviet era from Kazakstan and Turkmenistan, and would be interested to do so again if a reliable mechanism for making large cash transactions is established.

6 Conclusions

Livestock producers in Central Asia have lost much of their income basis and economic security in the post-Soviet period. The creation of a market economy brought policies that removed state support to agriculture. Established state channels for marketing are much weaker or broken, and producers must now find alternative markets while bearing the costs of production. The combined effect of these changes has left most livestock producers impoverished and vulnerable. However, there are new opportunities for producers to increase their income from livestock. These opportunities are currently difficult for producers to access due to policy constraints, official price distortions, lack of market information, and an absence of research targeted at commercial outputs.

Many of the livestock species and breeds of Central Asia produce wools, fibres and pelts that have high demand and value in the world market. These niche markets for specialised products have not been sufficiently exploited in the post-Soviet period. Newly privatised producers rely on selling live animals for their cash income, but experienced a great decline in income from wool, fibre and pelt products, due to the collapse in state marketing infrastructures. As the market economy has become more stable in some Central Asian countries, there was rising demand for fine wool and cashmere by the end of the 1990s. National traders, scientists and government officials are only beginning to become aware of the global commercial value of products such as cashmere and karakul pelts. Meanwhile, buyers from some neighbouring countries have been able to take advantage of the hiatus in marketing systems to buy raw wool, goat fibre and pelts at very low prices from individual producers who have become atomised since decollectivisation and hence lack bargaining power. The raw products have been mostly processed and manufactured in other countries, adding no value to the Central Asian economies. Other international buyers are keen to invest in a lucrative sector but are hampered by poor information and secure financial services.

For smaller-scale producers, the greatest income potential lies in the high value items of cashmere, karakul pelts and camel hair. These commodities yield a high income per animal. This enables producers with only a few animals—now the majority of farmers—to earn relatively large amounts from a small number of animals. By contrast, fine wool from Merino crossbreds, though now in great demand in Kazakstan and Kyrgyzstan, will mainly benefit larger-scale producers. The unit price for fine wool is lower compared to cashmere, to the ratio of 1:5 at 2001 producer prices. Thus a producer would need 50 crossbred Merino sheep to obtain the equivalent income from 10 cashmere-type goats. The potential returns to producers from karakul pelt marketing are also favourable, as better quality pelts realise high prices in the European market. Camel hair is also in demand internationally, which would benefit producers in the remote and poorest desert regions of Central Asia where camels are kept.

The growth potential of a cashmere goat industry in Central Asia can be judged by comparison with neighbouring Mongolia. Following the introduction of a market economy in the early 1990s, Mongolia's cashmere production has risen steadily, propelled by strong demand from China and other countries. Between 1995-99, raw

cashmere production rose by 70% (ACDI/VOCA 2001; Bakey et al. 2001). The Mongolian government has encouraged foreign direct investment and new technology. Mongolian herders, decollectivised in the early 1990s, have responded to commercial demand by continually increasing the number of goats kept, while sheep numbers have remained fairly constant (Figure 9). The national goat flock nearly doubled in the five-year period between 1994–99. In 2000 severe climate conditions led to a loss of several million sheep and goats. Despite the volatility of cashmere prices, selling raw cashmere has become the major source of income for privatised herders, particularly for smaller and medium-scale herders.

For the Mongolian national economy, cashmere has become the third main export commodity after copper and gold. Latest figures show that 10% of Mongolia's export income is from cashmere, providing a direct source of revenue to the government, a source of hard currency, and employment in the 30 domestic cashmere processing factories.

The volatility of world wool and fibre prices is not necessarily a deterrent for Central Asian livestock producers, who have a reliable income source from selling live animals. There is a steady domestic demand and good prices for meat in towns, and demand is increasing with prosperity. Wool and fibres are by-products of live animals. Harvesting these by-products provides an annually renewable income additional to sales of animals for slaughter, which is a single and final income. Due to the fluctuation of wool and fibre prices, low-income producers must continue to rely on live animal sales, but this is not incompatible with increasing their incomes by selling renewable by-products. Production strategies must therefore rely on dual-purpose meat and wool/fibre breeds, as well as retaining separate meat and fibre breeds within flocks, in order to reduce risks and maximise incomes. To a large extent, Central Asian producers are aware of and already practice these strategies, but policy and research action is required to increase their incomes from wool and fibres.

New market-oriented research is needed, that assists producers to meet the world demands for their products. This can be achieved by developing breeds with the commercially desirable characteristics, by making world price information available to producers, by informing potential investors about products available, and by providing policy-makers with recommendations for improving the marketing conditions so as to encourage producers and international buyers.

Such research will initially require support from international organisations. Central Asian governments are not willing to fund research that does not address current economic problems and potentials. This is understandable in view of the crisis in the livestock sectors, the shortage of government funding for research, and the concern that research must be re-oriented to new market conditions. In the estimation of Central Asian governments, national scientific research must prove capable of yielding relatively prompt economic returns. This is the challenge for national scientists and their international colleagues.

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